



Patent  
Attorney's Docket No. 001425-104

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of	)	MAIL STOP RCE
Masahiko Tanaka et al.	)	Group Art Unit: 1763
Application No.: 09/862,458	)	Examiner: KARLA A. MOORE
Filed: May 23, 2001	)	Confirmation No.: 7476
For: THIN-FILM DISPOSITION	)	
APPARATUS	)	
	)	
	)	

**Declaration of Hiroshi Nogami**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Hiroshi Nogami, hereby declare that:

1. In 1975, I graduated from the department of aeronautics and astronautics of Tokai University. In 1978, I graduated from the former graduate school (masters course) of the department of aeronautics and astronautics of Tokai University. In 1981, I satisfied all the school credits from the doctor's course of the department of aeronautics and astronautics of Tokai University. From 1982 to 1985, I was a part-time lecturer at the department of aeronautics and astronautics of Tokai University. During graduate school, I majored in plasma physics.

2. My academic presentations include:

H. Nogami, G. Xu, S. T. Ko, K. Numajiri, O. Okada

"Silicon Dioxide Films Formation on the Large Area Substrates using a Novel Radical Source", IDW'99(1999) pp.167-170.

Ge Xu, Akira Kumagai, Kenji Ishibahshi, Hiroshi Nogami, Masahiko Tanaka, Osamu Okada

"Plasma damage-free SiO<sub>2</sub> deposition for low-temperature poly-Si AMLCDs"

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Journal of the Society for Information Display,(2001), pp.181-185.

Akira Kumagai, G. Xu, S. T. Ko, Kenji Ishibashi, Masahiko Tanaka, Hiroshi Nogami,  
Osamu Okada  
"RS-CVD SiO<sub>2</sub> Formation with Radical Source"  
AM-LCD(2000), pp.139-142.

3. I am an inventor of certain related deposition systems, referred to as the Radical Shower CVD system. See U.S. Patent No. 6,245,396.

4. I began work at the ANELVA Corporation, now changed to CANON ANELVA CORPORATION, in February of 1985, and engaged in etching, ashing, and deposition. Since February of 2002 I have worked in the Legal and Intellectual Property division.

5. Subsequent academic activities include:  
1996/4-1998/3 & 2000/4-2002/3 member of the administrative board of the plasma & electronics interest group of Applied Physics (of Japan).

1997/5-2002/7 member of the editing board of Journal of the Vacuum Society of Japan (Shinkuu in Japanese).

6. I have studied the above-captioned patent application, the Official Action dated March 21, 2005 (hereinafter the "Official Action"), and the prior art cited therein.

7. Paragraph 6 of the Official Action alleges that it would have been obvious to modify the Yuda device in view of Umotoy in order to avoid the use of o-rings while maintaining a separation of gases as the gases transition from an upper plate to a lower plate as taught by Umotoy et al.

8. Yuda does not identify any problems with the plates or gas injectors and certainly does not teach or suggest sealing such plates with o-rings.

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9. In my opinion, since Yuda does not teach sealing its plates with o-rings, and does not identify any other problems with the plates, there would not be any motivation to "avoid the use of o-rings" as alleged in paragraph 6 of the Official Action. Accordingly, in my opinion, there would be no reason to modify Yuda based on Umotoy as alleged in the Official Action.

10. Paragraph 10 of the Official Action alleges that it would have been obvious to provide seals for arranging the dividing plate such that the only communication between the plasma discharge space and the film deposition process space is through the plurality of holes...in order to prevent gases from escaping upwards as taught by Beisswenger et al.

11. The seals in Beisswenger et al relied upon by the Office Action are **not** between the plasma discharge space and the film deposition process space. In Beisswenger et al, the plasma is generated in the space between the plate 46 and the electrode 22, and the film is also generated in the space below the plate 46. Accordingly, the seals 65, 66 do not **in any way** contribute to a separation between the plasma discharge space and the film deposition process space.

12. In my opinion, there would be no motivation in Beisswenger to provide seals for arranging the dividing plate of Yuda such that the only communication between the plasma discharge space and the film deposition process space is through the plurality of holes because the seals in Beisswenger et al relied upon by the Office Action are not between the plasma discharge space and the film deposition process space.

13. Furthermore, the reference in paragraph 10 of the Official Action to gases escaping upwards is not relevant to the issue.

14. Paragraph 14 of the Official Action alleges that Umotoy et al. teach that the choice of hole size for each gas is purely a process condition and as such, hole size

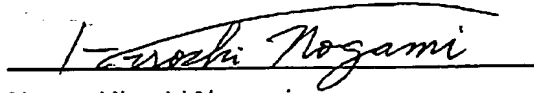
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will depend on gas flow rate, gas pressure, gas type, chamber pressure and the like (column 5, rows 57-63).

15. In my opinion, the cited section of Umotoy et al. has nothing to do with hole size. Furthermore, a process condition depends upon the determined goals. Since Umotoy et al. do not teach  $uL/D > 1$ , there would be no motivation to achieve this relationship.

16. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



Name: Hiroshi Nogami

Date: November /6, 2005